



*MODULAR TANK FOR STORAGE OF  
RAW AND DRINKING WATER*



# **Sotrad** **Water**

[WWW.SOTRADWATER.BE](http://WWW.SOTRADWATER.BE)



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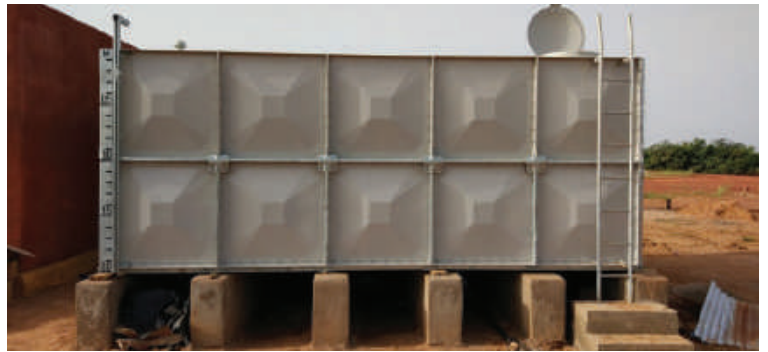
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Water is an essential resource often difficult to access. Sotrad Water sectional water tanks make it possible to store unlimited supplies of water in even the most remote areas. Our tanks are easy to install and cost effective.



## THE SOTRAD WATER SOLUTION

Sotrad Water's sectional water tanks are composed of panels made of:

- 💧 GRP (Composite Material Glass Reinforced Plastic) also known as FRP (Fiber Reinforced Plastic)
- 💧 Stainless or galvanised STEEL

Specially designed for water storage, our tanks are built by assembling and bolting pre-fabricated panels. Our professional team will assist you throughout the life of your project : technical review - manufacturing - shipment - assembly of the modular panels are guaranteed 10 years against possible defects in manufacture.

## FIELD OF APPLICATION

- 💧 **POTABLE WATER**  
Drinking water provision for towns, villages, base camps, military camps...
- 💧 **RAINWATER**  
Water distribution for industries, irrigation for agriculture...
- 💧 **WASTEWATER & PROCESSING**  
Sewage treatment for wastewater plants
- 💧 **FIRE FIGHTING**  
Fire reserve tanks for buildings at risk and sensitive areas
- 💧 **VARIOUS**  
Possibility of storing large varieties of liquids and dry matter (grain, wheat...)



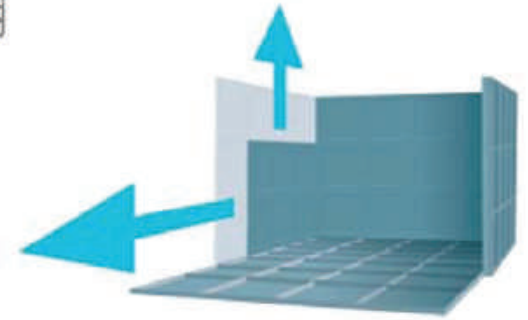
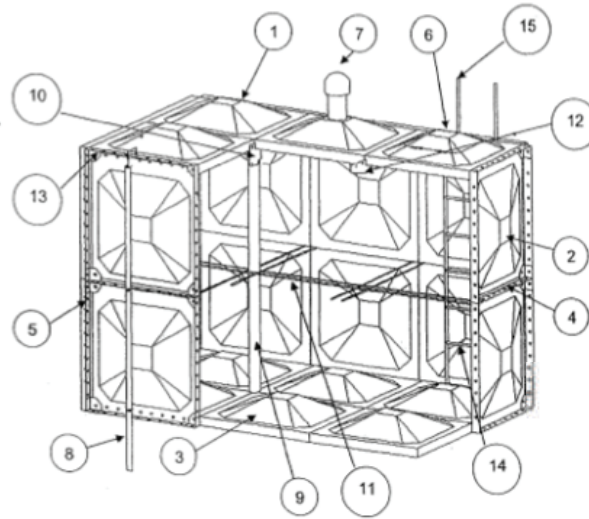
## COMPONENTS & ACCESSOIRES



**Inside**



**Outside**



## STANDARD EQUIPMENT

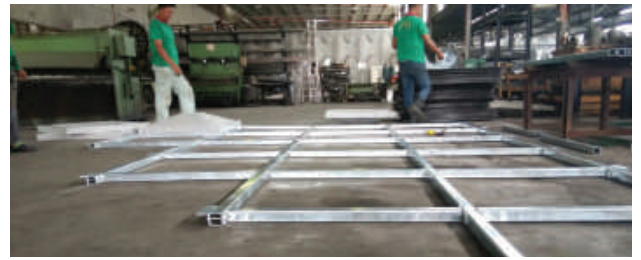
- |    |   |    |   |
|----|---|----|---|
| 1  | Stainless steel bracing                       | 13 | External protection stainless steel tie rod |
| 2  | Manhole                                       | 14 | Steel stay plate for tie rods               |
| 3  | Galvanised steel or aluminium external ladder | 15 | Galvanised steel corner                     |
| 4  | Corner angle                                  | 16 | Water level indicator                       |
| 5  | Composite roof support                        | 17 | Roof panel                                  |
| 6  | Side panel                                    | 18 | Composite support bracket                   |
| 7  | Stainless steel tie rod                       | 19 | Air vent                                    |
| 8  | PVC internal ladder                           | 20 | External spacer bar                         |
| 9  | Bottom panel                                  | 21 | Galvanised steel bracing                    |
| 10 | PVC support pole                              | 22 | Galvanised steel tie rod                    |
| 11 | Drain , pit panel                             | 23 | Galvanised beams                            |
| 12 | Flat bar                                      | 24 | IPN-C beam - Galvanised steel               |

## OPTIONAL EQUIPMENT

- 1 Caged ladder access
- 2 External self supporting structure
- 3 Stuffing box, flanges
- 4 Level sensor
- 5 Sump pit
- 6 Perimeter platform for maintenance
- 7 Water level indicator (ball float type)
- 8 Pipe connections & Fittings
- 9 Valve
- 10 IPN-1 beam Galvanised steel

## ASSEMBLY

Each of our sectional tanks have been designed to ensure a quick and easy installation using basic equipment. No specific qualifications are required. A tank with a capacity of 120m<sup>3</sup> and 158 panels (1x 1m), can be assembled by a team of 5 (1 qualified technician and 4 workmen).

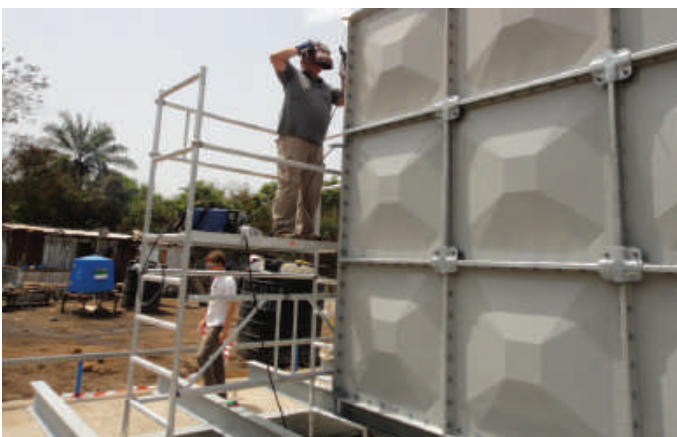


## ASSEMBLY PROCESS

- 1 Preparation of concrete plinths, level concrete foundation or steel tower
- 2 Assembly of steel skid base (to support the tank)
- 3 Positioning of the seals
- 4 Assembly of bottom panels onto the steel structure
- 5 Assembly of side panels and panel partitions (if applicable)
- 6 Positioning of tie rods and stainless steel partition supports for roof
- 7 Assembly of top cover (roof)
- 8 Reservoir impoundment

## CARE & MAINTENANCE

The only maintenance required on Sotrad Water's tanks is checking the tightness of the external bolts and nuts and occasionally cleaning it with water, no chemicals are required. In the event of accidental deterioration to the panel, it is possible to replace this using standard tools and new sealant. Resine kits for minor repairs can also be provided.



## FACTORY

To date, we have 30 years experience manufacturing and supplying both pressed steel and GRP water tanks. Our production facilities are based in Malaysia, just outside Kuala Lumpur in the industrial area of Port Klang. With a surface area of 20,000 m<sup>2</sup> equipped with 15 hydraulic presses we have the capacities to produce 300 000 GRP tank panels and 50 000 pressed steel tank panels annually. Sotrad Water exports worldwide through its subsidiaries and its network of independent distributors.



### FACTORY

Head Office, MALAYSIA - Malaysia SDN BHD - n°484871



### SUBSIDIARIES

AFRICA -Sotrad Water





## STANDARDS

Sotrad Water's tanks are manufactured according to the stringent International ISO 9001 Standard. PIPE-CO have a well established quality management system, ensuring consistent product quality.

### GRP

<b>BS 2782</b>	Methods of testing plastics
<b>SS 245:1995 ( SINGAPORE STANDARD )</b>	Glass reinforced polyester sectional water tanks
<b>BS 7491 PART 3:1994</b>	Glass fibre reinforced plastics cisterns for cold water storage - sectional tanks
<b>BS 7491 PART 1:1994</b>	Specification of GRP panels
<b>BS EN 13280:2001</b>	Specification for glass fibre reinforced cisterns of one piece and sectional construction, for the storage, above ground, of cold water
<b>BS 3532</b>	Specification for unsaturated polyester resin systems for low pressure fibre reinforced plastics
<b>JIS R3411 À R3417 (JAPANESE STANDARD)</b>	Textile glass chopped strand mats
<b>BS 3396, BS 3496 ET BS 3749</b>	Woven glass fibre fabrics for plastics reinforcement

### POTABILITY

<b>WRAS (Water Regulations Advisory Scheme)</b>	UK Approval Organisation
<b>ACS ( Attestation de Conformité Sanitaire )</b>	Directorate General of Health in France

### QUALITY

<b>ISO 9001:2000</b>	International Quality Management System designed to help organisations ensure they meet the needs of customers and other stakeholders while also meeting statutory and regulatory requirements related to a product.
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# COMPOSITE GRP ( GLASS REINFORCED PLASTIC )

## SECTIONAL WATER TANK



Sotrad Water's GRP sectional tank is composed of isophthalic polyester panels, reinforced with fibreglass (GRP - Glass Fibre Reinforced Plastic) and manufactured using the SMC hot pressed compression moulding process (Sheet moulding compound type 100kg/cm at 150°) complying to the relevant standards. Singapore Standard SS245:1995 / British Standard BS7491 part 3:1994 / BS European Standard EN13280:2001

### ADVANTAGES :

- POTABILITY**  
Dust and insect proof. The absence of light and a smooth and even surface prevents development of algae and bacteria. Materials comply to International Potability Standards
- HIGH TENSILE STRENGTH**  
Panels are tested up to 6 times the nominal load ( BS 2782 Standard ). Each tank carries a full 10 year guarantee against the unlikely event of faulty manufacture.
- HIGH MODULARITY**  
Possibility of modifying the tank ( compartmentalise, supplement, etc ). Easy to assemble and disassemble
- ADAPTED TO OUTDOOR USE**  
High UV resistance. No corrosion. The thermal conductivity of the GRP is 240 times inferior to that of metal ( steady temperature ).
- STRONG & DURABLE**  
Over 25 years service life with reduced maintenance
- ECONOMICAL**  
Industrialised production process. Quick to assemble with little labour and standard tools.

### TECHNICAL FEATURES

#### 1. PANELS

##### Design

Sotrad Water' GRP panels can be recognised by their thermoformed 'X' imprint ensuring rigidity, the 'X' symbol also represents the company logo.

##### Materials

Unsaturated isophthalic polyester resin is used and is compliant to BS 3532 The alkali-free glass fibre complies to JIS R3411 à R3417 or BS 3396, BS 3496 and BS 3749 The thermal performance of the panels can be reinforced by injecting a 25 to 50 mm layer of polyurethane foam. These insulated panels allow the temperature level inside the tank to be maintained and are particularly advised for use in extreme weather condition

## Dimensions & Weight





The GRP panels are standard available, 1x1m and can also be produced with dimensions of 1x0,5m, 1,5x1m and 2x1m. The thickness and the weight of the panels depend on the height of the tank. The higher the tank (1 to 4m) the thicker the panels will be. Example of a 1x1m panel:

Tank Height	1m	2m	3m	4m
Bottom panel	6 mm / 16,5 kg	8 mm / 19,5 kg	10 mm / 23,5 kg	12 mm / 27,5 kg
Panel L1	5 mm / 14,5 kg	7 mm / 18,5 kg	9 mm / 21,5 kg	12 mm / 26,5 kg
Panel L2		5 mm / 14,5 kg	7 mm / 18,5 kg	9 mm / 21,5 kg
Panel L3			5 mm / 14,5 kg	7 mm / 18,5 kg
Panel L4				5 mm / 14,5 kg
Roof panel	4mm / 13,5kg	4 mm / 13,5 kg	4 mm / 13,5 kg	4 mm / 13,5 kg



## Physical properties

Physical properties	Sotrad Water	Acceptation
Tensile strength (MN/M2)	104	>70
Flexural strength (MN/M2)	170	>100
Glass content (%/24hrs)	39	>25
Hardness (Barcol)	59	>30
Water absorption (%/24hrs)	0,05	<1,0

- 
**SEALANT**  
 High density non toxic PVC foam type NORSEAL V760 by Saint Gobain or SCAPA 3507 (cf data sheet)
- 
**BOLTS & NUTS**  
 Screws, nuts and washers are hot dipped galvanised (Optional : SS 304 or SS 316)
- 
**INTERNAL TIE ROD**  
 Inox SS 316
- 
**SKID base tank support**  
 Main beams and steel framework are hot dip galvanised

## TANK DIMENSIONS

The nominal capacity is calculated by taking the internal dimensions of a tank filled to its maximum level. When mounting hydraulic accessories such as the water level indicator, it is necessary to leave a minimum height of 15 cm roof clearance. The useable volume is estimated based on the following formula :  $L \times l \times (H-0,15)$  Example of 1x1m panel

Dimensions (m) h x l x L	N° of panels	volume ( m <sup>3</sup> )	Useable volume
1 x 1 x 1	6	1	0,85
1 x 2 x 1	10	2	1,70
1 x 4 x 2	28	8	6,80
1 x 6 x 2	40	12	10,20
1 x 10 x 4	108	40	34,00
1 x 15 x 4	158	60	51,00
2 x 1 x 1	10	2	1,85
2 x 2 x 1	16	4	3,70
2 x 4 x 2	40	16	14,80
2 x 6 x 2	56	24	22,20
2 x 10 x 4	136	80	74,00
2 x 15 x 4	196	120	111,00
3 x 4 x 1	52	24	22,80
3 x 6 x 2	72	36	34,20
3 x 10 x 4	164	120	114,00
3 x 12 x 6	252	216	205,20
3 x 12 x 8	312	288	273,60
3 x 15 x 10	450	450	427,50
4 x 4 x 2	64	32	30,80
4 x 6 x 2	88	48	46,20
4 x 10 x 4	192	160	154,00
4 x 12 x 6	288	288	231,00
4 x 15 x 8	352	484	404,25
4 x 15 x 10	500	600	577,50

# Sotrad Water